



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/574,132

03/30/2006

Wilhelmus Christianus Maria Lohbeck

TS6315US

7891

23632 7590 02/17/2011  
SHELL OIL COMPANY  
P O BOX 2463  
HOUSTON, TX 772522463

EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT

PAPER NUMBER

3676

MAIL DATE

DELIVERY MODE

02/17/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/574,132	<b>Applicant(s)</b> LOHBECK, WILHELMUS CHRISTIANUS MARIA	
	<b>Examiner</b> JENNIFER H. GAY	<b>Art Unit</b> 3676	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

This Action is in response to Applicant's Reply of December 20, 2010. Claims 1-10 and 12-14 remain pending in the application.

### **Response to Arguments**

1. Applicant's arguments filed December 20, 2010 have been fully considered but they are not persuasive.

Applicant has argued that it is not inherent that a tubular element will shorten to some degree when radially expanded as the walls of the tubular element could thin instead, as argued previously by Applicant.

The Examiner first notes that Applicant has not provided any persuasive evidence to counter the Examiner's position that a tubular element will inherently shorten to some degree when radially expanded. Assertions made by Applicant's attorney in a response to an Office Action are not considered to be persuasive evidence against a statement of inherency.

Second, page 3, lines 11-14 of the instant specification clearly state that the overlapping slots will result in significantly less axial shortening than the tubular element during expansion. This implies that Applicant agrees that a radially expanded tubular element will shorten at least to some degree.

Third, it is well known that when a metal tubular is radially expanded it will experience some longitudinally oriented shortening as well as some thinning of the walls of the tubular. This is evidenced by the documents cited by the Examiner and included herewith. The "Poisson's ratio" reference sets forth the scientific basis for the shortening of tubular elements upon radial expansion. The reference entitled "Structural Behavior of a Solid Tubular Under Large Radial Plastic Expansion", referred to hereafter as Seibi et al., sets forth the behavior of tubular elements as they are expanded in a wellbore. This behavior includes both wall thinning and shortening.

Art Unit: 3676

Regarding the Bailey and Nguyen references, Applicant has argued that there is not disclosure in either reference that suggests that the outer structure has first and second portions that are spaced apart a distance that changes during expansion as there is not disclosure of the respective first and second end portions being securely held to the tubular element.

While the Examiner agrees that there is no specific recitation of the first and second end portions being securely held to the tubular element, the lack of a secure connection between the outer tubular and the tubular element would result in the outer tubular falling down the well when the assembly was placed in the well. As, prior to expansion, the outer tubular is not in engagement with the wellbore wall, the only thing that could possibly maintain the outer tubular in the desired position is a secure engagement between the outer tubular and the tubular element.

Further, the purpose of the invention of both Bailey and Nguyen is to hang an inner tubular in the casing string, or open hole in Nguyen, with an outer tubular therebetween. It would not be possible for the inner tubular element to be hung in the casing string if there was not a secure engagement between the inner tubular element and at least the two ends of the outer tubular **see 1:67-2:2 of Bailey**.

Applicant has argued that the first and second end portions of the outer tubular element of Brezinski are not connected to the tubular element throughout radial expansion thereof.

The first and second end portions of the outer tubular are connected to the inner tubular element either directly or indirectly through expansion of the inner tubular element. The phrase "connected to" is not equivalent to "secured to".

Applicant has argued that element **60** of Brezinski is not connected to the tubular **54** but slides along the tubular thus the axial distance between the first and second end portions is unaffected.

As indicated above, the phrase "connected to" is not equivalent to "secured to" and both ends of the outer tubular element of Brezinski are directly or indirectly through

Art Unit: 3676

expansion of the inner tubular element. Further, the sliding motion of element **60** would clearly change the distance between the first and second end portions as shown from Figure 3 to Figure 4.

Regarding the rejection of claims 4, 9, 10, and 12-14, Applicant has not specifically argued the Examiner's assertion that the limitations of the above claims are obvious, either over Bailey or Nguyen alone or in combination with secondary references. Therefore, Applicant has conceded that the respective limitations are obvious as presented by the Examiner.

Specifically regarding the rejection of claim 4, as Applicant has not argued the Examiner's taking of OFFICIAL NOTICE, the Examiner's position that the use of welds is old and well known and an obvious modification has been conceded by Applicant and thus will be treated as admitted prior art.

### **Claim Rejections - 35 USC § 102**

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-3 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Bailey et al. (US 6,098,717, referred to hereafter as Bailey).**

**Regarding claim 1:** Bailey discloses an assembly for use in a wellbore formed in an earth formation, comprising:

Art Unit: 3676

an expandable tubular element **14** and an outer structure **16** having first and second portions arranged at a distance from each other **Fig 1**, wherein the expandable tubular element shortens as a result of radial expansion thereof **this feature is not disclosed however metal tubulars inherently shorten to some degree when radially expanded as evidenced by “Poisson’s Ratio” and Seibi et al.;**

the first portion and the second portion of the outer structure being connected to the tubular element throughout radial expansion of the tubular element at respective locations axially spaced from each other such that the distance between the first and second portions changes during of radial expansion of the tubular element between the first and second portions; and

the outer structure further having a third portion arranged to move radially outward upon the change in distance between the first and second portions;

wherein the radially outward movement of the third portion is larger than the radially outward movement of the tubular element that results from radial expansion of the tubular element.

**Bailey does not specifically disclose that the first and second portions move toward each other when the tubular element is expanded or that the outer structure includes a third portion that is radially expanded outward more than the tubular element, however, as seen in Figure 2, the outer structure clearly includes overlaying slits. As defined by Applicant, a tubular element that includes a plurality of overlaying or overlapping slits will experience significantly less axial shortening compared to expandable tubulars that do not include slits page 3, lines 11-14. Therefore, since the outer structure of Bailey includes a plurality of overlapping slits and is securely held at the first and second ends to the inner tubular element (see explanation in Response to Arguments), the inherent characteristic of the outer structure to experience less axial shortening than the inherent shortening of the inner tubular member will result in the first and second portions being moved closer to each other and some portion there between being moved radially outward.**

Art Unit: 3676

**Regarding claim 2:** Wherein the third portion is arranged to move radially outward as a result of a decrease in distance between the first portion and the second portions **see above**.

**Regarding claim 3:** Wherein the third portion is arranged to move radially outward by virtue of radially outward bending of the third portion **see above**.

**Regarding claim 5:** Wherein the tubular element is an inner tubular element and the outer structure is an outer expandable tubular element arranged around the inner tubular element, and wherein the outer tubular element, when unrestrained from the inner tubular element, is susceptible to less axial shortening as a result of radial expansion than the inner tubular element **see above**.

**Regarding claim 6:** The outer tubular element is provided with a plurality of openings **26** in the wall thereof, said openings overlapping each other in the axial direction **Fig 2 - the term “axial” does not provide an patentable distinction without an indicated direction or orientation as an axis can be taken from any point and in any direction**.

**Regarding claim 7:** The openings are slots provided in the wall of the outer expandable tubular element, the slots extending in substantially in the axial direction **the term “axial” does not provide an patentable distinction with an indicated direction or orientation as an axis can be taken from any point and in any direction**.

**Regarding claim 8:** The first portion and the second portion are respective end portions of the outer tubular element.

4. **Claims 1-3 and 5-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Nguyen et al. (US 7,048,048, referred to hereafter as Nguyen).**

Art Unit: 3676

**Regarding claim 1:** Nguyen discloses an assembly for use in a wellbore formed in an earth formation, comprising:

an expandable tubular element **62** and an outer structure **50** having first and second portions arranged at a distance from each other **Fig 2**, wherein the expandable tubular element shortens as a result of radial expansion thereof **this feature is not disclosed however metal tubulars inherently shorten to some degree when radially expanded as evidenced by “Poisson’s Ratio” and Seibi et al.;**

the first portion and the second portion of the outer structure being connected to the tubular element throughout radial expansion of the tubular element at respective locations axially spaced from each other such that the distance between the first and second portions changes during of radial expansion of the tubular element between the first and second portions; and

the outer structure further having a third portion arranged to move radially outward upon the change in distance between the first and second portions;

wherein the radially outward movement of the third portion is larger than the radially outward movement of the tubular element that results from radial expansion of the tubular element.

**Nguyen does not specifically disclose that the first and second portions move toward each other when the tubular element is expanded or that the outer structure includes a third portion that is radially expanded outward more than the tubular element, however, as seen in Figure 2, the outer structure clearly includes overlaying slits. As defined by Applicant, a tubular element that includes a plurality of overlaying or overlapping slits will experience significantly less axial shortening compared to expandable tubulars that do not include slits page 3, lines 11-14. Therefore, since the outer structure of Nguyen includes a plurality of overlapping slits and is securely held at the first and second ends to the inner tubular element (see explanation in Response to Arguments), the inherent characteristic of the outer structure to experience less axial shortening than the inherent shortening of the inner tubular member will result in the first and second portions being moved closer to each other and some portion there between being moved radially outward.**



**Regarding claim 2:** Wherein the third portion is arranged to move radially outward as a result of a decrease in distance between the first portion and the second portions **see above**.

**Regarding claim 3:** Wherein the third portion is arranged to move radially outward by virtue of radially outward bending of the third portion **see above**.

**Regarding claim 5:** Wherein the tubular element is an inner tubular element and the outer structure is an outer expandable tubular element arranged around the inner tubular element, and wherein the outer tubular element, when unrestrained from the inner tubular element, is susceptible to less axial shortening as a result of radial expansion than the inner tubular element **see above**.

**Regarding claim 6:** The outer tubular element is provided with a plurality of openings in the wall thereof, said openings overlapping each other in the axial direction **Fig 2 - the term “axial” does not provide an patentable distinction without an indicated direction or orientation as an axis can be taken from any point and in any direction.**

**Regarding claim 7:** The openings are slots provided in the wall of the outer expandable tubular element, the slots extending in substantially in the axial direction **the term “axial” does not provide an patentable distinction with an indicated direction or orientation as an axis can be taken from any point and in any direction.**

**Regarding claim 8:** The first portion and the second portion are respective end portions of the outer tubular element.

5. **Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Brezinski et al. (US 2005/0092485, referred to hereafter as Brez).**

**Regarding claim 1:** Brez discloses an assembly for use in a wellbore formed in an earth formation, comprising:

an expandable tubular element **62** and an outer structure **56** having first **58** and second **60** portions arranged at a distance from each other **Fig 3**, wherein the expandable tubular element shortens as a result of radial expansion thereof **this feature is not disclosed however metal tubulars inherently shorten to some degree when radially expanded as evidenced by “Poisson’s Ratio” and Seibi et al.;**

the first portion and the second portion of the outer structure being connected to **(It is noted that “connected to” is not equivalent to “secured to” and both ends of the outer structure are "connected to" the expandable tubular element either directly or indirectly. Further, the sliding motion of the second end 60 would clearly change the distance between the first and second ends portions as shown from Figure 3 to Figure 4.)** the tubular element throughout radial expansion of the tubular element at respective locations axially spaced from each other such that the distance between the first and second portions changes during of radial expansion of the tubular element between the first and second portions **Fig 4;** and

the outer structure further having a third portion **shown in Figure 4** arranged to move radially outward upon the change in distance between the first and second portions; wherein the radially outward movement of the third portion is larger than the radially outward movement of the tubular element that results from radial expansion of the tubular element **Fig 4.**

**Regarding claim 2:** Wherein the third portion is arranged to move radially outward as a result of a decrease in distance between the first portion and the second portions **Fig 4.**

**Regarding claim 3:** Wherein the third portion is arranged to move radially outward by virtue of radially outward bending of the third portion **Fig 4.**

Art Unit: 3676

**Claim Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey or Nguyen.**

Neither Bailey nor Nguyen discloses that the first and second portions of the outer structure are welded to the tubular element. However, the respective outer structures are clearly securely fastened to the inner tubular element though the means of attachment is not disclosed. The Examiner takes **OFFICIAL NOTICE** that it is old and well known in the art to use welding to secure various components of downhole structures together. The use of welds allows for a secure connection that can also be removed if or when repairs are necessary. Further, the use of welds to secure the outer structure to the inner tubular element of either Bailey or Nguyen would have achieved the predictable result of preventing sand and other debris from getting between the two structures and causing unnecessary wear.

8. **Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey or Nguyen in view of Metcalfe (US 6,457,533).**

Neither Bailey nor Nguyen discloses filling an annular space between the inner and outer tubular elements with a hardenable fluidic compound.

Metcalfe discloses a downhole expandable tubular that includes an inner tubular element **28** and an outer tubular element **24** with a sealing material **26** disposed therebetween. Metcalfe further discloses the use of such systems with cementing

Art Unit: 3676

operations and depicts element 26 as a cementitious material per 37 CFR 1.84(h)(3).

Cement is a known hardenable fluidic compound.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the systems of Bailey or Nguyen to place a hardenable fluidic compound between the inner and outer tubular elements as taught by Metcalfe in order to have from an effective zonal isolation system that would have provided support to the bore wall as well as provided control of the flow of oil from the wellbore formation **1”20-35**.

**9. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey or Nguyen in view of Kirk et al. (US 7,096,939, referred to hereafter as Kirk).**

Neither Bailey nor Nguyen discloses the outer structure including a plurality of axially extending elongated, metal members spaced around the circumference of the structure.

Kirk discloses a downhole expandable tubular system that includes an inner tubular element **12** and an outer tubular structure **24**. The outer tubular structure includes a plurality of circumferentially spaced elongated bars **25, Fig 2A, B**.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the outer structure of Bailey or Nguyen to include a plurality of circumferentially spaced metal bars as taught by Kirk in order to have not only provided a downhole centralizer but also to have provided a centralizer even after the tubular system was expanded **4:10-15**.

### **Conclusion**

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 3676

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER H. GAY whose telephone number is (571)272-7029. The examiner can normally be reached on Monday through Friday, 7am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shane Bomar can be reached on (571) 272-7026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer H Gay/  
Primary Examiner, Art Unit 3676

JHG, 1/20/11